

WHAT IS CLAIMED IS:

1. A vibration type actuator comprising:

an elastic member in which a shaft center portion  
is formed in hollow shape along an axial direction and  
5 in which driving vibration is generated in a driving  
portion;

a fastening member which fastens said elastic  
member to an electro-mechanical energy conversion  
element;

10 an output shaft which penetrates the shaft center  
portion of said elastic member;

a moving member which is kept in press contact  
with the driving portion of said elastic member and  
which rotates together with said output shaft; and

15 a bearing member which is located on an inner  
periphery portion of said bearing member and near a  
distal end portion of said fastening member and which  
journals said output shaft.

20 2. A vibration type actuator according to Claim  
1, wherein said bearing member has one surface facing  
the distal end portion of said fastening member and  
another surface opposite thereto facing said elastic  
member.

25 3. A vibration type actuator according to Claim  
1, wherein said bearing member can move by a fixed

distance along said axial direction.

4. A vibration type actuator according to Claim  
1, wherein said elastic member has a clearance in which  
5 said bearing portion can move in the axial direction,  
near the distal end portion of said fastening member.

5. A vibration type actuator according to Claim  
1, wherein said output shaft is restrained from  
10 slipping off outward in the axial direction.

6. A vibration type actuator according to Claim  
1, wherein said fastening member is a hollow thread  
member which has a thread portion formed in an outer  
15 periphery portion and wherein said elastic member has a  
step which restrains a screwing position of said  
fastening member, in the inner periphery portion  
thereof.

7. A vibration type actuator according to Claim  
1, wherein said bearing member is deformable in a  
20 direction of a shaft center of said output shaft.

8. A vibration type actuator according to Claim  
1, wherein said bearing member is deformable in the  
25 axial direction of said output shaft.

9. A vibration type actuator according to Claim 1, wherein said bearing member has a groove portion formed along an outer circumferential direction in an outer periphery portion.

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10. A vibration type actuator according to Claim 1, wherein said bearing member is an O-ring.

10 11. A vibration type actuator according to Claim 1, wherein said bearing member is made of resin or rubber.

15 12. A vibration type actuator according to Claim 1, wherein said output shaft has a groove or a step in an outer periphery portion thereof and said bearing member is placed at a position of the groove or the step.

20 13. A vibration type actuator according to Claim 1, wherein said bearing member is placed substantially at a node position of the vibration of said elastic member.

25 14. A vibration type actuator comprising:  
a plurality of elastic members in each of which a shaft center portion is formed in hollow shape along an axial direction and in each of which driving vibration

is generated in a driving portion;

an electro-mechanical energy conversion element which is interposed between said plurality of elastic members;

5 a fastening member in which a shaft center portion is formed in hollow shape along an axial direction and which fastens said elastic members to said electro-mechanical energy conversion element;

10 an output shaft which penetrates the shaft center portions of said elastic members and which is restrained from slipping off outward in an axial direction;

15 a moving member which kept in press contact with the driving portion of said elastic members and which rotates together with said output shaft; and

a bearing portion which is located on an inner periphery portion of said elastic members and near a distal end portion of said fastening member and which journals said output shaft.

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15. A vibration type actuator according to Claim 14, wherein said bearing portion has one surface facing the distal end portion of said fastening member and another surface opposite thereto facing said elastic member.

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16. A vibration type actuator according to Claim

14, wherein said bearing portion can move by a fixed distance along said axial direction.

17. A vibration type actuator according to Claim  
5 14, wherein said elastic member has a clearance in which said bearing portion can move in the axial direction, near the distal end portion of said fastening member.

10 18. A vibration type actuator according to Claim 14, wherein a moving distance of said bearing portion in said axial direction is restrained by the inner periphery portion of said elastic members and the  
15 distal end portion of said fastening member.